

### **REMARKS/DISCUSSION OF ISSUES**

Claims 1-8 and 11-22 are pending in the application.

The Examiner is respectfully requested to acknowledge the claim for priority and receipt of certified copies of all the priority documents.

The Examiner is respectfully requested to state whether the drawings are acceptable.

Applicants acknowledge that claims 14, 19 and 23 have been indicated to define patentable subject matter and would be allowed if rewritten in independent form, including all features of their respective base claims and any intervening claims.

Reexamination and reconsideration are respectfully requested in view of the following Remarks.

### **35 U.S.C. § 101**

The Office Action rejects claims 20-22 under 35 U.S.C. § 101.

Applicants respectfully traverse these rejections for at least the following reasons. The Office Action states that claims 20-22 is rejected because "*the 'process' claims fail to tie with another statutory class . . . or transform underlying subject matter (article or materials) to a different state or thing.*"

Applicants respectfully disagree.

Claim 20 recites, specifically, employing processing means of a data processing system to filter the input signal to generate a filtered signal. Processing means and a data processing system belong at least to the statutory class of "manufacture." Therefore, claims 20-22 are all tied to another statutory class under 35 U.S.C. § 101.

Therefore, Applicants respectfully submit that the rejection of claims 20-22 under 35 U.S.C. § 101 is in error.

Accordingly, for at least these reasons, Applicants respectfully request that the rejections of claims 20-22 under 35 U.S.C. § 101 be withdrawn.

**35 U.S.C. §§ 102 and 103**

The Office Action rejects: claims 1-4 and 7-8 and 20 under 35 U.S.C. § 102 over Irwan et al., U.S. Patent Application Publication 2002/0118840 ("Irwan"), claims 5-6, 11-13, 15-17 and 21 under 35 U.S.C. § 103 over Irwan in view of Ali U.S. Patent 6,895,093 ("Ali"); and claim 18 under 35 U.S.C. § 103 over Irwan in view of Shaffer et al. U.S. Patent 6,973,184 ("Shaffer").

Applicants respectfully traverse these rejections for at least the following reasons.

**Claim 1**

At the outset, the undersigned attorney thanks the Examiner for the courtesy of a brief telephonic interview on 8 July 2009. During that interview, the undersigned attorney requested clarification of the Office Action. In particular, the undersigned attorney asked the Examiner to identify exactly what signals and parameters in Irwan he believes correspond to the various specifically-recited signals and parameters of claim 1.

During that interview, the Examiner explained that he believes that Irwan discloses: (1) the signal "y" corresponding to the input signal of claim 1; (2) the signal "yb" corresponding to the filtered signal of claim 1; and (3) the "signals" x and w input to the means 23 corresponding to the first and second output signals of claim 1.

Furthermore, the Office Action indicates that: (1) means 24 corresponds to the filter of claim 1; (2) means 23 corresponds to the analysis circuit of claim 1; and (3) the means 25 corresponds to the transformation circuit of claim 1.

Applicants respectfully disagree for at least the following reasons.

As recited in claim 1, the method includes applying an input signal and a filtered signal to a transformation circuit and performing a matrixing operation on the input signal and the filtered signal to transform the input signal and the filtered signal into first and second output signals.

As noted above, the Examiner states that the signal "y" in Irwan corresponds to the recited input signal, the signal "yb" corresponds to the recited filtered signal,

and means 25 corresponds to the transformation circuit.

However, it is apparent from inspection of all of the embodiments shown in FIGs. 2, 3, 4, 8, 9 and 10 that in none of those embodiments is the signal "y" (supposedly corresponding to the input signal of claim 1) applied to the means 25.

Indeed, Applicants respectfully submit that Irwan does not disclose applying to a transformation circuit both: (1) an input signal; and (2) a filtered signal produced by applying the input signal to a filter.

Therefore Applicants respectfully submit that Irwan does not disclose all of the elements of claim 1.

Furthermore, claim 1 recites a transformation circuit performing a matrixing operation on the input signal and the filtered signal to transform the input signal and the filtered signal into the first and second output signals, where the matrixing operation employs a correlation parameter and a level parameter.

Again, the Examiner states that means 25 of Irwan corresponds to the transformation circuit of claim 1, and "signals" x and w input to the means 23 corresponds to the first and second output signals of claim 1.

However, it is apparent from inspection of FIGs. 2, 3, 4, 8, 9 and 10 of Irwan that means 25 does not transform anything into the "signals" x and w that are input to means 23. Indeed, the signals that are input to the means 23 appear to be completely independent of the outputs of any operations performed by the means 25 in Irwan.

Therefore, again, Applicants respectfully submit that Irwan does not disclose all of the elements of claim 1.

Applicants respectfully submit that there are many other inconsistencies in the Office Action's attempt to contort FIGs. 2-3 of Irwan to somehow try to make it read onto claim 1. However, the two deficiencies mentioned above should be more than sufficient to illustrate the problem. Applicants respectfully submit that no possible interpretation of the elements in FIGs. 2-3 of Irwan would possibly result in the method recited in claim 1.

Therefore, for at least these reasons, Applicants respectfully submit that claim

1 is patentable over Irwan. Accordingly, Applicants respectfully request that the rejection of claim 1 be withdrawn and claim 1 be allowed at this time.

Claims 2-4

Claims 2-4 depend from claim 1 and are deemed patentable for at least the reason set forth above with respect to claim 1. Accordingly, Applicants respectfully request that the rejections of claims 2-4 be withdrawn and claims 2-4 be allowed at this time.

Claims 7-8

Among other things, the devices of claims 7 and 8 each include a transformation circuit for transforming an input signal and a filtered signal by a matrixing operation into first and second output signals, where the matrixing operation depends on the correlation parameter and the level parameter. For similar reasons to those set forth above with respect to claim 1, Applicants respectfully submit that no possible interpretation of the elements in FIG. 2 of Irwan would possible a device including such a transformation circuit.

Also with respect to claim 8, the Office Action fails to identify a single element in any of the numerous figures of Irwan that even supposedly corresponds to the decoder of claim 8, but instead vaguely cites paragraphs in the background section that discloses that prior art multichannel stereo systems cannot operate on an audio signal from an existing CD unless that signal has been specially encoded for multi-channel sound. The Examiner is respectfully requested to cite something in any of the embodiments disclosed in Irwan that discloses, in conjunction with all of the other elements of claim 8 (including the elements of base claim 7) the encoder of claim 8, or else withdraw the rejection of claim 8.

Therefore, for at least these reasons, Applicants respectfully submit that claims 7 and 8 are patentable over Irwan. Accordingly, Applicants respectfully request that the rejections of claims 7 and 8 be withdrawn and claims 7 and 8 be allowed at this time.

Claim 20

Among other things, the method of claim 20 includes employing a processing

means to perform a matrixing operation on an input signal and a filtered signal to transform the input signal and the filtered signal into the first and second output signals, where the matrixing operation employs the correlation parameter and the level parameter. For similar reasons to those set forth above with respect to claim 1, Applicants respectfully submit that the prior art does not disclose any method that includes this combination of features.

Accordingly, Applicants respectfully request that the rejection of claim 20 be withdrawn and claim 20 be allowed at this time.

Claims 5-6, 11-13, 15-17 and 21

Claims 5-6, 11-13, 15-17 and 21 depend variously from claims 1, 7 and 20. Applicants respectfully submit that Ali does not remedy the shortcomings of Irwan as set forth above with respect to claims 1, 7 and 20. Accordingly, claims 5-6, 11-13, 15-17 and 21 are deemed patentable for at least the reasons set forth above with respect to claims 1, 7 and 20, and for the following additional reasons.

Applicants respectfully traverse the proposed combination of Irwan and Ali with respect to claims 5-6, 11-13, 15-17 and 21 for at least the following reasons.

Applicants rely on at least on the following standards with regard to proper rejections under 35 U.S.C. § 103. First, a rejection on obviousness grounds under 35 U.S.C. § 103 cannot be sustained by mere conclusory statements: instead there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. In re Kahn, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See also KSR International Co. v. Teleflex Inc., 550 U.S. 398, 82 USPQ2d 1385, 1396 (2007) (quoting Federal Circuit statement with approval) See M.P.E.P. § 2141(III). Second, there must be a reasonable expectation of success. *"The mere fact that references can be combined or modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art."* M.P.E.P. § 2143.01(III) (citing KSR International Co. v. Teleflex Inc., 82 USPQ2d 1385, 1396 (2007)). Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. *"All words in a claim must be considered in judging the patentability of*

that claim against the prior art." M.P.E.P. § 2143.03 (citing In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)). An integral part of this analysis requires establishing the level of ordinary skill in the art of invention of claim 1. See M.P.E.P. §§ 2141(II)(C) and 2141.03.

At the outset, Applicants respectfully submit that the Office Action fails to establish the level of ordinary skill in the art of invention of claims 5-6, 11-13, 15-17 and 21. As explained above, this is a fundamental requirement for maintaining a rejection under 35 U.S.C. § 103. Therefore, Applicants respectfully submit that the Office Action does not satisfy the requirements for maintaining rejections of claims 5-6, 11-13, 15-17 and 21 under 35 U.S.C. § 103.

Furthermore, with respect to claims 5, 11 and 15, the Office Action fails to provide any reasoning with any rational underpinnings to support the conclusory statement that it would have been obvious to have replaced Inwan's band pass filter in means 24 with an all-pass filter, or to establish that there would have been a reasonable expectation that a successful device could be produced with such a substitution.

Additionally, Applicants specifically traverse the **conclusory statement** in the Office Action that the features recited in claims 12 and 16 "*is merely an obvious variation.*" Applicants respectfully submit that this is directly contrary to M.P.E.P. § 2141(III) which states that a rejection under 35 U.S.C. § 103 cannot be based on such conclusory statements.

Finally, with respect to claims 13 and 17, Applicants respectfully traverse the Official Notice and respectfully request that the Examiner provide evidence which establishes that it was well known at the time of the invention to replace Inwan's band pass filter with an all-pass filter comprising one period of a Schroeder-phase complex, or if the Office Notice is based on facts within the personal knowledge of the Examiner, to provide an affidavit under 37 CFR 1.104(d)(2). See M.P.E.P. § 2144.03.

Accordingly, Applicants respectfully request that the rejections of claims 5-6, 11-13, 15-17 and 21 be withdrawn and claims 5-6, 11-13, 15-17 and 21 be allowed at

this time.

Claim 18

Claim 18 depends from claim 7. Applicants respectfully submit that Shaffer does not remedy the shortcomings of Irwani as set forth above with respect to claim 7. Therefore, claim 18 is deemed patentable for at least the reasons set forth above with respect to claim 7, and for the following additional reasons.

Applicants respectfully traverse the proposed combination of Irwani and Shaffer with respect to claim 18.

At the outset, Applicants respectfully submit that the Office Action fails to establish the level of ordinary skill in the art of invention of claim 18. Therefore, Applicants respectfully submit that the Office Action does not satisfy the requirements for maintaining a rejection under 35 U.S.C. § 103.

Furthermore, the Office Action fails to provide any reasoning with some rational underpinning to support the proposed modification to Irwani, or to establish that there would have been a reasonable expectation that a successful device could be produced with such a modification.

Finally, Applicants specifically traverse the conclusory statement in the Office Action that the features recited using a maximum value of a cross-correlation function parameter as one of the set of spatial parameters *"is merely an obvious variation."* Applicants respectfully submit that this is directly contrary to M.P.E.P. § 2141(III) which states that a rejection under 35 U.S.C. § 103 cannot be based on such conclusory statements.

Accordingly, Applicants respectfully request that the rejection of claim 18 be withdrawn and claim 18 be allowed at this time.

**CONCLUSION**

In view of the foregoing explanations, Applicants respectfully request that the Examiner reconsider and reexamine the present application, allow claims 1-8 and 11-22 and pass the application to issue. In the event that there are any outstanding matters remaining in the present application, the Examiner is invited to contact

Kenneth D. Springer (Reg. No. 39,843) at (571) 283.0720 to discuss these matters.

Respectfully submitted,

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